CALIBRATION STANDARD REQUIREMENT

FOR A

PLAXIAL COAXIAL CABLE

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PROCUREMENT PACKAGE

Prepared by: Naval Warfare Assessment Division
Measurement Science Directorate
Code MS 33
Corona, CA 91718-5000

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1. SCOPE

1.1 Scope. This requirement defines the mechanical and electrical performance requirements for a Plaxial Coaxial Cable, hereinafter referred to as the PCC. The PCC is a 100 percent shielded flexible cable assembly consisting of the cable and two type-N male connectors. The PCC is intended for use by shipboard and shorebased Navy personnel in association with calibration equipment used to calibrate microwave-power-measurement instruments and spectrum analyzers.

2. APPLICABLE DOCUMENTS

2.1 Controlling Specifications. MIL-T-28800, “Military requirement, Test Equipment for use with Electrical and Electronic Equipment, General specification for,” and all documents referenced therein of the issues in effect on the date of this solicitation shall form a part of this requirement.

3. REQUIREMENTS

3.1 General. The PCC shall conform to the Type II, Class 5, Style E requirements as specified in MIL-T-28800 for Navy shipboard and shorebased use as modified below.

3.1.1 Design and Construction. The PCC design and construction shall meet the requirements of MIL-T-28800 for Type II equipment.

3.1.2 Dimensions. The PCC cable shall have a length of six (6) feet ± 0.5 inch (1.8 m ± 1.5 cm).

3.2 Environmental Requirements. The PCC shall meet the environmental requirements for a Type II, Class 5, Style E equipment with the deviations specified below.

3.2.1 Temperature and Humidity. The PCC shall meet the conditions below:

3.2.1.1 Non-operating. The PCC shall meet the non-operating temperature requirements from -40ºC to 65ºC, that is, performance and accuracy shall not be adversely affected if the PCC is subjected to temperatures within this range while in storage.

3.2.1.2 Operating. The PCC shall meet the specified performance and accuracy requirements under the conditions listed below.

Temperature (ºC)	Relative Humidity (%)
10 to 30	95
30 to 40	75

3.2.2 Electromagnetic Compatibility. The electromagnetic compatibility requirements of MIL-T-28800 are limited to the following areas: CE01, CE03, CS01, CS02, CS06, RE01, RE02, (14 kHz to 1 GHz), and RS03.

3.3 Reliability. Type II reliability requirements are as specified in MIL-T-28800.

3.4 Maintainability. The PCC has no repairable or replaceable parts.

3.5 Performance Requirements. The PCC shall provide the following characteristics over the operating frequency range of zero (0) to 18 GHz.

3.5.1 Coaxial Cable. The PCC shall utilize ultra low-loss coaxial cable with the following characteristics.

3.5.1.1 Attenuation. The maximum attenuation of the PCC coaxial cable shall not exceed $5.5\sqrt{f}$ +0.72f dB/100 ft, where f is in GHz.

3.5.1.2 Center Conductor. The PCC coaxial-cable center conductor shall be silver-plated copper wire.

3.5.1.3 Electrical Shield. The PCC coaxial cable electrical shield shall be helically wrapped, overlapped silver-plated copper foil.

3.5.1.4 Mechanical Shield. The PCC coaxial cable shall have a mechanical shield of braided, silver-plated round copper wire.

3.5.1.5 Minimum Bending Radius. The PCC coaxial cable minimum bending radius shall not exceed two (2) inches.

3.5.2 Connectors. The PCC shall have end connectors consisting of a precision type-N male connector.

3.5.2.1 VSWR. The VSWR of each connector shall not exceed 1.12.

3.5.3 Armor. The PCC shall have an armor covering of heat-resistant stainless steel flexible conduit.

3.5.4 Strain Relief. The PCC shall have strain relief boots at the juncture of the connector and coaxial cable.

3.5.5 Marking. The PCC shall be marked with the manufacturer’s name and part number.

3.5.6 Insertion Loss. The insertion loss of the PCC shall not exceed two (2) dB.